

1999

Annual Consumer Report on the Quality of Tap Water

Fort Riley

Introduction

This is an annual report on the quality of water delivered by Fort Riley. Under the “Consumer Confidence Reporting Rule” of the federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information on the source of our water, its constituents and the health risks associated with any contaminants.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems. (E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers.

EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

The Fort Riley Drinking Water System draws ground water from the alluvial aquifer at the confluence of the Smoky Hill and Republican Rivers. Water drawn out of the eight wells in the alluvial aquifer provides drinking water to Main Post, Custer Hill, Camp Funston, Camp Forsyth, Camp Whitside, and Marshall Army Air Field. Fort Riley has one treatment facility through which our water passes before being consumed.

Monitoring of Your Drinking Water

Our water system uses only EPA-approved laboratory methods to analyze your drinking water. Water samples are taken from the distribution systems and residents' taps by our personnel. Samples are then shipped to the Kansas Department of Health and Environment laboratory where a full spectrum of water quality analyses are performed.

Our water system monitors for the contaminant groups listed in Column 1 of the following table using EPA-approved methods. Column 2 of the table specifies the monitoring frequency for these contaminant groups.

Table 1

Analyte Groups and Monitoring Frequency Table

Analyte/Contaminant group	Monitoring Frequency
Biological contaminants (total coliform group) ¹	Monthly
Trihalomethanes ²	4 quarterly samples every year
Lead and copper	Once every Three Years
Inorganic contaminants (IOCs) ³	One sample per year
Unregulated contaminants ⁴	4 quarterly samples once every nine years
Volatile Organic Compounds (VOCs) ⁵	One sample per year

¹ Contaminants in this group include total coliform, fecal coliform and hetero bacteria

² Contaminants in this group include total trihalomethanes

Definitions of Key Terms

To gain a better understanding of how the data are presented in the Results Table on page 4, several key terms are defined below:

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Our water system analyzes for some contaminants (including lead and copper) which are governed by ALs, and not MCLs.

A full list of acronyms and terms is included in Appendix A.

Results Table. Detected Contaminants

The following table presents the analytical results of our monitoring for the reporting period of 1999.

Table 2

Contaminant	MCL	MCLG	AL	Level Found	Range	Exceeded Standard?	Likely Source Of Contaminant
Total Trihalomethanes	100 ppb	0	NA	53.7 ppb	22.9-53.7 ppb	No	By-product of drinking water chlorination.
Ethyl benzene	700 ppb	700 ppb	NA	2.6 ppb	0-2.6 ppb	No	Discharge from petroleum refineries.
Alpha emitters	15 pCi/L	0	NA	1 pCi/L	0-1 pCi/L	No	Erosion of natural deposits.
Xylenes	10000 ppb	10000 ppb	NA	17.5 ppb	0-17.5 ppb	No	Discharge from petroleum and chemical factories.
Nitrate	10 ppm	10 ppm	NA	2.62 ppm	0.6-2.62 ppm	No	Runoff and percolation from fertilizer use; leaching from septic tanks; erosion of natural deposits.
Lead	NA	0	15000 ppt	240 ppt*	1**	No	Corrosion of household plumbing systems; erosion of natural deposits.

* This value represents the 90th percentile value of the most recent round of sampling.

** This value represents the total number of sampling sites which exceed the action level.

Detected Contaminants

We monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have also been analyzed, but were not present or were below the detection limits of the lab equipment. A listing of all contaminants that are tested is provided in Appendix B.

Ethyl benzene – This compound is tested for once a year and is detected well below (less than .004 of) the MCL.

Alpha emitters – Results from testing this year were substantially below MCL.

Xylenes – Annual testing for this compound falls well below the MCL.

Nitrate - This compound is tested quarterly and does not exceed the MCL.

Lead – EPA requires us to report 90th percentile value of the most recent round of sampling, as well as the total number of sampling sites exceeding the action level. As presented in the Results Table, we reported 240 ppt as the 90th percentile value of the most recent round of sampling (performed in June, 1998). In the “Range” column, we reported that one (1) sampling site exceeded the action level for lead. Because of the low levels detected in the past, Fort Riley qualifies for reduced monitoring every three years. The next sampling date is due in 2001.

Public Involvement

This Consumer Confidence Report was prepared by the Directorate of Environment and Safety. For additional information regarding this report, please contact either Larry D. Ness (785-239-2630) or Darrel E. Edson (785-239-0399).

APPENDIX A

Acronyms/Terms Used In This Report

MCL	Maximum Contaminant Level; the highest level of a contaminant that is allowed in drinking water.
MCLG	Maximum Contaminant Level Goal; the level of a contaminant in drinking water below which there is no known or expected health risk.
MDL	Method Detection Limit; minimum laboratory detection limit as set by the EPA. A laboratory must be able to detect a contaminant at this level or lower.
AL	Action Level; the concentration of a contaminant which, if exceeded, trigger treatment or other requirements which a water system must follow.
TT	Treatment Technique; a required process intended to reduce the level of a contaminant in drinking water.
NA	Not Applicable.
ppm	parts per million; a unit of measure equivalent to a single penny in \$10,000.
ppb	parts per billion; a unit of measure equivalent to a single penny in \$10,000,000.
ppt	parts per trillion; a unit of measure equivalent to a single penny in \$10,000,000,000.
ppq	Parts per quadrillion; a unit of measure equivalent to a single penny in \$10,000,000,000,000.
MFL	Million fibers per liter; a measure of asbestos in water.
SDWA	Safe Drinking Water Act; Federal law that sets forth drinking water regulations.
pCi/L	Picocuries per liter; a measure of radioactivity in water.
mrem/yr	Millirem per year; a measure of radioactivity in water.
Level Found	Laboratory analytical results for a contaminant; this value is evaluated against an MCL or AL to determine compliance.
Range	The range of the highest and lowest analytical values of a reported contaminant. For example, the range of reported analytical detection for an unregulated contaminant may be 10.1 ppm (lowest value) to 13.4 ppm (highest value). EPA requires this range to be reported.

APPENDIX B

Contaminant	MCLG	MCL	NA	MDL	Units	Likely Source Of Contaminant
1,1-Trichloroethane	200	200	NA	0.5	ppb	Discharge from metal degreasing sites and other factories.
1,1,2-Trichloroethane	3	5	NA	0.5	ppb	Discharge from industrial chemical factories.
1,1-Dichloroethylene	7	7	NA	0.5	ppb	Discharge from industrial chemical factories.
1,2,4-Trichlorobenzene	70	70	NA	0.5	ppb	Discharge from textile-finishing factories.
o-Dichlorobenzene	600	600	NA	0.5	ppb	Discharge from industrial chemical factories.
p-Dichlorobenzene	75	75	NA	0.5	ppb	Discharge from industrial chemical factories.
1,2-Dichloroethane	0	5	NA	0.5	ppb	Discharge from industrial chemical factories.
1,2-Dichloropropane	0	5	NA	0.05	ppb	Discharge from industrial chemical factories.
2,4-D	70	70	NA	0.1	ppb	Runoff from herbicides used on row crops.
Alachlor	0	2	NA	0.2	ppb	Runoff from herbicides used on row crops.
Alpha emitters	0	15	NA	0	pCi/L	Erosion of natural deposits.
Antimony	6	6	NA	3	ppb	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Atomic Absorption; Furnace technique			NA	0.8	ppb	
Atomic Absorption; Platform ICP-Mass Spectrometry			NA	0.4	ppb	
Hydride-Atomic Absorption			NA	1	ppb	
Arsenic	NA	50	NA		ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Asbestos	7	7	NA	0.01	MFL	Decay of asbestos cement water mains; erosion of natural deposits.
Atrazine	3	3	NA	0.1	ppb	Runoff from herbicides used on row crops.
Barium						

Benzo(a)pyrene	0	200	NA	20	ppt	Leaching from linings of water storage tanks and distribution lines.
Contaminant	MCLG	MCL	AL	MDL	Units	Likely Source Of Contaminant
Beryllium Atomic Absorption; furnace Atomic Absorption; Platform Inductively Coupled Plasmas ICP-Mass Spectrometry	4	4	NA NA NA NA	0.2 0.02 0.3 0.3	ppb ppb ppb ppb	Discharge from metal refineries and coal burning factories; discharge from electrical, aerospace, and defense industries.
Beta/photon emitters	0	4	NA		mrem/yr	Decay of natural and man-made deposits.
Cadmium Atomic Absorption; furnace technique Inductively Coupled Plasma	5	5	NA NA	0.1 1	ppb ppb	Corrosion of galvanized pipes, erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Carbofuran	40	40	NA	0.9	ppb	Leaching from soil fumigant used on rice and alfalfa.
Carbon tetrachloride	0	5	NA	0.5	ppb	Discharge from chemical plants and other industrial activities.
Chlordane	0	2	NA	0.5	ppb	Residue of banned termiticide.
Chlorobenzene	100	100	NA	0.5	mg/L	Discharge from chemical and agricultural chemical factories.
Chromium Atomic Absorption; furnace technique Inductively Coupled Plasma	100	100	NA NA	1 7	ppb ppb	Discharge from steel and mills; erosion of natural deposits.
cis-Dichloroethylene	70	70	NA	0.5	ppb	Discharge from industrial chemical factories.
Coliform, Fecal	0	Routine and repeat samples are total coliform positive, and one is also fecal or <i>E. Coli</i> positive.	NA		NA	Human and animal fecal waste.

Contaminant	MCLG	MCL	AL	MDL	Units	Likely Source Of Contaminant
Copper	1.3	NA	1.3	0.02	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Cyanide	200	200	NA	0.02	ppm	Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
Distillation, Spectrophotometric			NA	0.005	ppm	
Distillation, Automated, Spectrophotometric			NA	0.05	ppm	
Distillation, Automated, Selective Electrode			NA	0.02	ppm	
Distillation, Amenable, Spectrophotometric						
Dalapon	200	200	NA	1	ppb	Runoff from herbicide used on rights of way.
Di (2-Ethylhexyl) Phthalate	0	6	NA	0.6	ppb	Discharge from rubber and chemical factories.
Di (2-Ethylhexyl) Adipate	400	400	NA	0.6	ppb	Discharge from chemical factories.
Dioxin (2,3,7,8-TCDD)	0	30	NA		ppq	Emissions from waste incineration and other combustion; discharge from chemical factories.
Dibromochloropropane	0	200	NA		ppt	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Dichloromethane	0	5	NA	0.5	ppb	Discharge from industrial chemical factories.
Dinoseb	7	7	NA	0.2	ppb	Runoff from herbicide used on soybeans and vegetables.
Diquat	20	20	NA	0.4	ppb	Runoff from herbicide use.
Endothall	100	100	NA	9	ppb	Runoff from herbicide use.
Endrin	2	2	NA	0.01	ppb	Residue of banned insecticide.
Ethyl benzene	700	700	NA	0.5	ppb	Discharge from petroleum refineries.
Ethylene dibromide (EDB)	0	50	NA	10	ppt	Discharge from petroleum refineries.
Fluoride	4	4	NA		ppm	Erosion of natural deposits; water additive, which promotes strong teeth; discharge from fertilizer and aluminum factories.
Glyphosate	700	700	NA	6	ppb	Runoff from herbicide use.
Heptachlor	0	400	NA	40	ppt	Residue of banned termiticide.

Contaminant	MCLG	MCL	AL	MDL	Units	Likely Source Of Contaminant
Mercury Manual Cold Vapor Technique Automated Cold Vapor Technique	2	2	NA NA	0.2 0.2	ppb ppb	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Nitrate (as nitrogen) Automated Hydrazine Reduction Automated Cadmium Reduction Ion Selective Electrode Ion Chromatography			NA NA NA NA	0.01 0.05 1 0.01	ppm ppm ppm ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Nitrite (as nitrogen) Spectrophotometric Automated Cadmium Reduction Manual Cadmium Reduction Ion Chromatography	1	1	NA NA NA NA	0.01 0.05 0.01 0.004	ppm ppm ppm ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Oxamyl	200	200	NA	2	ppb	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, and livestock.
PCB (polychlorinated biphenyls)	0	500	NA	100	ppt	Runoff from landfills; discharge of waste chemicals.
Pentachlorophenol	0	1	NA	0.04	ppb	Discharge from wood preserving factories.
Picloram	500	500	NA	0.1	ppb	Herbicide runoff.
Combined radium	0	5	NA		pCi/L	Erosion of natural deposits.
Selenium Atomic Absorption; furnace Atomic Absorption; gaseous hydride	50	50	NA NA	2 2	ppb ppb	Discharge from petroleum and metal refineries; erosion of natural deposits discharge from mines.
Silvex (2,4,5-TP)	50	50	NA	0.2	ppb	Residue of banned herbicide.
Simazine	4	4	NA	0.07	ppb	Herbicide runoff.
Styrene	100	100	NA	0.04	ppb	Discharge from rubber and plastic factories; leaching from landfills.
Tetrachloroethylene	0	5	NA	0.14	ppb	Leaching from PVC pipes; discharge from factories and dry cleaners.
Thallium Atomic Absorption; furnace Atomic Absorption; Platform ICP-Mass Spectrometry	0.5	2	NA NA NA	1 0.7 0.3	ppb ppb ppb	Leaching from ore-processing sites; discharge from electronics, glass and drug factories.

Contaminant	MCLG	MCL	AL	MDL	Units	Likely Source Of Contaminant
Vinyl chloride	0	2	NA	0.5	ppm	Discharge from petroleum factories; discharge from chemical factories.
Xylenes	10	10	NA	0.5	ppm	Discharge from petroleum factories; discharge from chemical factories.